

REMARKS

Election/Restriction

Claims 31-40 have been withdrawn from consideration as being directed to a non-elected embodiment of the invention. The Applicant affirms this election. Additionally, the Applicant has elected to cancel the non-elected claims 31-40 without prejudice for possible consideration in a continuing application.

Claim Rejections – 35 USC §112

Claims 1-30 have been rejected as being indefinite under 35 USC §112. More specifically, claims 1-4, 9, 11, 13-15, 21-23 and 26 have been rejected based on use of the language “adapted to”. Appropriate correction has been made to each of the cited claims (and any corresponding rewritten dependent claims) except for independent claim 26, which does not recite the phrase “adapted to”. Claims 8 and 12 have been rejected based on use of the language “generally”. Claim 12 has also been rejected based on use of the language “substantially”. Claims 8 and 12 have been amended to remove the cited claim language. Accordingly, the Applicant respectfully requests withdrawal of each of the claim rejections under 35 USC §112.

Claim Rejections – 35 USC §102 and §103

Claims 1-9, 11-13, 16-17 and 26-30 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,431,189 to Deibert (the “Deibert reference”).

Claims 1-9 and 18 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,688,585 to Vetter.

Claims 1-18 and 20-23 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,552,163 to Biancalana et al. (the “Biancalana et al. reference”).

Claims 19 and 24-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Biancalana et al. reference in view of U.S. Patent No. 5,339,843 to Benedict et al. (the “Benedict et al. reference”).

Rewritten Independent Claim 10

Dependent claim 10 has been rewritten in independent form. Additionally, intervening dependent claim 9 has been cancelled without prejudice for possible submission in a continuing application. Dependent claim 10 was rejected solely over the Biancalana et al. reference. It is well established that “an invention is anticipated if the same device, including all the claim limitations, is shown in a single prior art reference. Every element of the claimed invention must be literally present, arranged as in the claim.” Richardson v. Suzuki Motor Co. Ltd., 9 USPQ.2d 1913, 1920 (Fed. Cir. 1989).

Rewritten independent claim 10 recites, in pertinent part, an apparatus for cleaning a part comprising at least one spray nozzle for directing a cleaning fluid onto at least a portion of the part disposed within a cleaning chamber, with the spray nozzle extending through the housing and having a spray head disposed within the cleaning chamber, and “said at least one spray nozzle being adjustable to vary a distance between said spray head and said at least a portion of the part”.

Although dependent claim 10 was rejected solely over the Biancalana et al. reference, there is no indication in the Office Action as to how the Biancalana et al. reference teaches the

adjustable feature associated with the spray nozzle. The Applicant has carefully reviewed the Biancalana et al. reference and can find no indication or even a suggestion that the nozzles 10 or 11 are “adjustable” so as to “vary a distance” between the spray head of the nozzle and a part positioned within a cleaning chamber. To the contrary, as illustrated in FIG. 1, the nozzles 10 are integrated into the wall of the tubular housing 7 in communication with the annular delivery manifold 23. There is no indication that the nozzles 10 are “adjustable” in any manner whatsoever so as to “vary a distance” between the tip of the nozzle 10 and whatever part might be positioned within the tubular housing 7. Likewise, the nozzles 11 are actually configured as small openings extending through the wall of the tubular housing 7 in communication with the annular delivery manifold 24. As such, the nozzle openings 11 clearly would not be “adjustable” in any sense of the word.

For at least the reasons discussed above, neither the Biancalana et al. reference nor any of the cited patent references disclose or even suggest the subject matter recited in rewritten independent claim 10. Accordingly, the Applicant respectfully requests withdrawal of the rejection of independent claim 10.

Rewritten Independent Claim 17

Dependent claim 17 has been rewritten in independent form. It is well established that “an invention is anticipated if the same device, including all the claim limitations, is shown in a single prior art reference. Every element of the claimed invention must be literally present, arranged as in the claim.” Richardson v. Suzuki Motor Co. Ltd., 9 USPQ.2d 1913, 1920 (Fed. Cir. 1989).

Dependent claim 17 was rejected over the Deibert reference and the Biancalana et al. reference. The Office Action states that with respect to the recitation of “the part is a measurement probe”, this language is an intended use recitation and therefore does not differentiate the claimed apparatus from a prior art apparatus. However, the Applicant has rewritten dependent claim 17 to positively recite “a measurement probe used in association with a coordinate measurement machine and including a probe tip” in combination with the various elements recited in association with an apparatus for cleaning the probe tip. The Applicant notes that neither the Deibert reference or the Biancalana et al. reference recites an apparatus for cleaning a probe tip of a measurement probe that is used in association with a coordinate measurement machine. To the contrary, the Deibert reference discloses an apparatus for disinfecting hands, and the Biancalana et al. reference discloses a cleaning device for dental instruments.

For at least the reasons discussed above, none of the cited patent references disclose or even suggest the subject matter recited in rewritten independent claim 17. Accordingly, the Applicant respectfully requests withdrawal of the rejection of independent claim 17.

Rewritten Independent Claim 19

Dependent claim 19 has been rewritten in independent form. Additionally, independent claim 1 and intervening dependent claim 18 have been cancelled without prejudice for possible submission in a continuing application. Dependent claims 2-8, 11, 13, 16 and 20 have been amended to depend from rewritten independent claim 19. Dependent claims 13, 14 and 20 have also been amended to adhere to the antecedent basis established in rewritten independent claim

19 and to further define the claimed invention.

Dependent claim 19 was rejected solely over the Biancalana et al. reference in view of the Benedict et al. reference. Rewritten independent claim 19 recites, in pertinent part, an apparatus for cleaning a part comprising at least one nozzle for directing a cleaning fluid onto at least a portion of the part disposed within a cleaning chamber, and “wherein said cleaning fluid is a cleaning solution comprising a mixture of compressed air and an alcohol”. The Office Action states that the Benedict et al. reference teaches “a cleaning system for cleaning parts with cleaning liquid comprising alcohols.” Additionally, the Office Action states that “[i]t would have been obvious for one skilled in the art . . . to use the alcohol taught by Benedict et al. in the apparatus taught by Biancalana et al. to obtain the claimed invention. This is because using alcohols for cleaning instruments is well known in the art.” The Applicant respectfully traverses these statements for at least the following reasons.

As correctly noted in the Office Action, other than the Benedict reference, none of the cited patent references discloses a cleaning apparatus or device that uses a cleaning solution including an alcohol. Specifically, the Deibert reference discloses an apparatus for disinfecting hands which sprays a solution of water and a disinfectant. Notably, there is no indication of using a cleaning solution that includes either compressed air or an alcohol. The Vetter reference discloses an automatic washer for cleaning hands and sterilizing articles that sprays a cleaning media including water and, if necessary, a gaseous cleaning media (col. 4, ll. 37-39). Once again, there is no indication of using a cleaning solution that includes either compressed air or an alcohol. As to the Biancalana et al. reference, the dental cleaning device sprays a solution of compressed air and water/disinfectant onto the dental instruments or other dental devices

positioned within the housing 7. However, the Biancalana et al. reference fails to teach or suggest spraying a cleaning solution comprising a mixture of compressed air and an alcohol.

Although the Benedict et al. reference appears to disclose the use of an alcohol in association with a controlled agitation cleaning system, the cleaning system is significantly and distinguishably different from the cleaning apparatus recited in the independent claim 19 and the cleaning devices disclosed in the cited patent references. Specifically, the Benedict et al. reference discloses a container 16 holding a quantity of cleaning fluid 14 (e.g., alcohol) within which the electronic item 11 to be cleaned is immersed. The container 16 includes a number of nozzles 24 that generate fluid streams 28 which move and agitate the cleaning fluid 14. However, the Benedict et al. reference expressly states that “[i]t is important that the nozzles all be placed so that the agitation streams emitted therefrom are each immersed in the fluid and do not appreciably roil or otherwise disturb the fluid surface 14a, so as to minimize combustible vapor production”. (Col. 3, ll. 9-13; emphasis added). Additionally, the agitation system incorporates various features into its design to eliminate flammability hazards. For example, the cleaning system is free of electrical power and electrical-driven parts to eliminate spark/arc hazards (e.g., via the use of air motors instead of electrically driven pumps). Additionally, the cleaning system uses a special type of lid 18 that essentially eliminates the risk of electro-static discharge and which shields the fluid 14 from sparks, arcs, or other ignition phenomena.

As an initial matter, the controlled agitation system disclosed in the Benedict et al. reference is an immersion-type system wherein the parts to be cleaned are placed into a bath of cleaning fluid 14. However, the cleaning apparatus recited in independent claim 19 and the cleaning devices disclosed in the other cited patent references utilize a spray-type system

wherein a stream of airborne solution is sprayed onto the part to be cleaned. Additionally, the cleaning apparatus recited in independent claim 19 uses a cleaning solution comprising a mixture of compressed air and an alcohol that is sprayed onto a part via at least one spray nozzle. However, the use of such a solution is directly contrary to the teachings of the Benedict et al. reference which expressly states that “[i]t is important that the nozzles . . . do not appreciably roil or otherwise disturb the fluid surface 14a, so as to minimize combustible vapor production”. The cleaning apparatus recited in independent claim 19 clearly does not minimize combustible vapors, but instead generates an airborne vapor-like solution comprised of compressed air and alcohol that is sprayed onto the part to be cleaned. As should be appreciated, the Benedict et al. reference actually teaches away from the use of an airborne cleaning solution comprised of compressed air and alcohol, as recited in independent claim 19.

Moreover, as indicated above, the agitation system disclosed in the Benedict et al. reference incorporates various features into its design that are meant to eliminate flammability hazards, including the elimination of all electrical-driven parts and the use a special lid that avoids electro-static discharge and shields the fluid 14 from ignition sources. However, the cleaning apparatus recited in independent claim 19 and the other cited patent references each teach the use of electrical sensors and/or other electrical devices, and each appear to be at least partially open to the atmosphere surrounding the cleaning device. Therefore, the teachings of the Benedict et al. reference are once again directly contrary to the cleaning apparatus recited in independent claim 19 and the cleaning devices disclosed in the cited patent references. As should be appreciated, the Benedict et al. reference actually teaches away from the use of electrical sensor devices that generate electronic control signals, as recited in independent claim

19.

Finally, there are distinct advantages that are realized by using the particular cleaning solution recited in independent claim 19. For example, the use of cleaning solution that is comprised of a mixture of compressed air and an alcohol provides cleaning capabilities that are not realized by the cleaning system disclosed in the Benedict et al. reference or any of the cited patent references. Specifically, alcohol is itself an excellent cleaner. However, when mixed with compressed air, the resulting stream of cleaning solution has even greater cleaning ability due to the impact force provided by the airborne solution stream against the part. This advantage is clearly not provided by the cleaning system disclosed in the Benedict et al. reference, which does not utilize compressed air to provide high impact cleaning, but instead utilizes low impact fluid agitation to reduce disturbance of the fluid surface 14a and to minimize combustible vapor production. Additionally, as discussed above, the other cited patent references fail to disclose or even suggest the use of compressed air and/or an alcohol in a cleaning solution mixture.

Another advantage provided by the particular cleaning solution recited in independent claim 19 is the minimization of fluidic waste material. Notably, alcohol has a relatively high evaporation rate compared to other fluids, such as water. The evaporation rate is even further enhanced when the alcohol is mixed with compressed air to form the cleaning solution recited in independent claim 19. As should be appreciated, the use of a cleaning solution comprised of mixture of compressed air and alcohol tends to reduce the amount of fluidic waste material generated by the cleaning apparatus. The enhanced evaporation feature provided by the apparatus recited in independent claim 19 and the resulting reduction in fluidic waste is neither taught nor suggested by the cited patent references. As indicated above, the Deibert and Vetter

references each fail to disclose or suggest the use of cleaning solution containing either compressed air or an alcohol. As such, the amount of fluidic waste generated by these cleaning devices is substantial. As also indicated above, although the Biancalana et al. reference discloses the use of compressed air, there is no indication or suggestion of providing a cleaning solution formed by mixing an alcohol with compressed air. As a result, the cleaning device disclosed in the Biancalana et al. reference would generate an appreciably greater amount of fluidic waste relative to the cleaning apparatus recited in independent claim 19.

For at least the reasons discussed above, none of the cited patent references disclose the subject matter recited in rewritten independent claim 19, whether taken alone or in combination. Accordingly, the Applicant respectfully requests withdrawal of the rejection of independent claim 19 and the claims depending therefrom.

Claims 2-8, 11-16 and 20 depend either directly or indirectly from rewritten independent claim 19, and are patentable for at least the reasons supporting the patentability of independent base claim 19. However, additional reasons support the patentability of the claims depending from independent base claim 19. For example, dependent claim 13 further recites a mixer, with the valve supplying the compressed air to the mixer in response to a control signal, and the mixer intermixing the alcohol with the compressed air to form said cleaning solution. Additionally, dependent claims 14 and 15 recite further features associated with the mixer. As discussed above, none of the cited patent references disclose the use of cleaning solution comprised of compressed air and an alcohol, much less a mixer for forming the recited cleaning solution. Accordingly, the subject matter recited in dependent claims 13-15 is patentable over the art of record in addition to the reasons supporting the patentability of independent base claim 19.

Rewritten Independent Claim 24

Dependent claim 24 has been rewritten in independent form. Additionally, independent claim 21 has been cancelled without prejudice for possible submission in a continuing application. Dependent claims 22 and 23 have been amended to depend from rewritten independent claim 24.

Similar to dependent claim 19, dependent claim 24 was rejected solely over the Biancalana et al. reference in view of the Benedict et al. reference, with the Office Action stating that “[i]t would have been obvious for one skilled in the art . . . to use the alcohol taught by Benedict et al. in the apparatus taught by Biancalana et al. to obtain the claimed invention. This is because using alcohols for cleaning instruments is well known in the art.”

Rewritten independent claim 24 recites, in pertinent part, an apparatus for cleaning a part comprising “a mixer for intermixing a cleaning agent with a compressed fluid to form a cleaning solution, wherein said compressed fluid is air and said cleaning agent is an alcohol” and at least one nozzle arranged to direct the cleaning solution onto at least a portion of the part disposed within a cleaning chamber.

As discussed above with regard to independent claim 19, other than the Benedict et al. reference, none of the cited patent references disclose a cleaning apparatus or device that uses a cleaning solution including an alcohol. Additionally, while the Benedict et al. reference appears to disclose the use of an alcohol in association with a controlled agitation cleaning system, the disclosed immersion-type cleaning system is clearly different from that recited in independent claim 24 and in the cited patent references, and in several instances actually teaches away from

the use of spray-type cleaning systems utilizing a stream of airborne cleaning solution.

Moreover, neither the Benedict et al. nor any of the cited patent references exhibit the enhanced evaporation feature provided by the cleaning apparatus recited in independent claim 24 which correspondingly results in a reduction in fluidic waste.

For at least the reasons discussed above, none of the cited patent references disclose the subject matter recited in rewritten independent claim 24, whether taken alone or in combination. Accordingly, the Applicant respectfully requests withdrawal of the rejection of independent claim 24 and the claims depending therefrom. Claims 22, 23 and 25 depend either directly or indirectly from rewritten independent claim 24, and are patentable for at least the reasons supporting the patentability of independent base claim 24.

Amended Independent Claim 26

Independent claim 26 has been amended. Dependent claims 28 and 29 have been amended to adhere to the antecedent basis established in amended independent claim 26. Amended independent claim 26 recites, in pertinent part, an apparatus for cleaning a part comprising “means for mixing compressed air and an alcohol to form a cleaning solution” and means for spraying the cleaning solution onto at least a portion of the part disposed within a cleaning chamber.

As discussed above with regard to independent claim 19, other than the Benedict et al. reference, none of the cited patent references disclose a cleaning apparatus or device that uses a cleaning solution including an alcohol. Additionally, while the Benedict et al. reference appears to disclose the use of an alcohol in association with a controlled agitation cleaning system, the

disclosed immersion-type cleaning system is clearly different from that recited in independent claim 26 and in the cited patent references, and in several instances actually teaches away from the use of spray-type cleaning systems utilizing a stream of airborne cleaning solution.

Moreover, neither the Benedict et al. nor any of the cited patent references exhibit the enhanced evaporation feature provided by the cleaning apparatus recited in independent claim 26 which correspondingly results in a reduction in fluidic waste.

For at least the reasons discussed above, none of the cited patent references disclose the subject matter recited in amended independent claim 26. Accordingly, the Applicant respectfully requests withdrawal of the rejection of independent claim 26 and the claims depending therefrom.

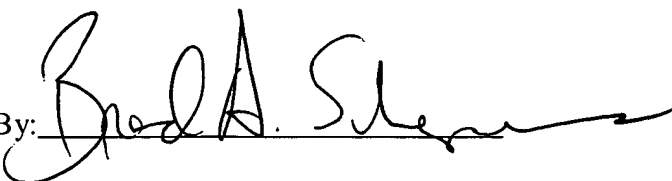
Claims 27-30 depend either directly or indirectly from amended independent claim 26, and are patentable for at least the reasons supporting the patentability of independent base claim 26. However, additional reasons support the patentability of the claims depending from independent base claim 26. For example, dependent claim 30 recites that the means for spraying includes at least one spray nozzle and "means for adjusting a distance between said at least one spray nozzle and said at least a portion of the part disposed within said cleaning chamber." As discussed above with regard to rewritten independent claim 10, neither the Biancalana et al. reference nor any of the references of record disclose a cleaning apparatus having a spray nozzle that is adjustable so as to adjust or vary a distance between the spray nozzle and the part disposed within the cleaning chamber. Accordingly, the subject matter recited in dependent claim 30 is patentable over the art of record in addition to the reasons supporting the patentability of independent base claim 26.

CONCLUSION

In view of the foregoing remarks, it is respectfully submitted that the Applicant's application is now in condition for allowance with pending claims 2-8, 10-17, 19, 20 and 22-30.

Reconsideration of the subject application is respectfully requested. Timely action towards a Notice of Allowability is hereby solicited. The Examiner is encouraged to contact the undersigned by telephone to resolve any outstanding matters concerning the subject application.

Respectfully submitted,

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